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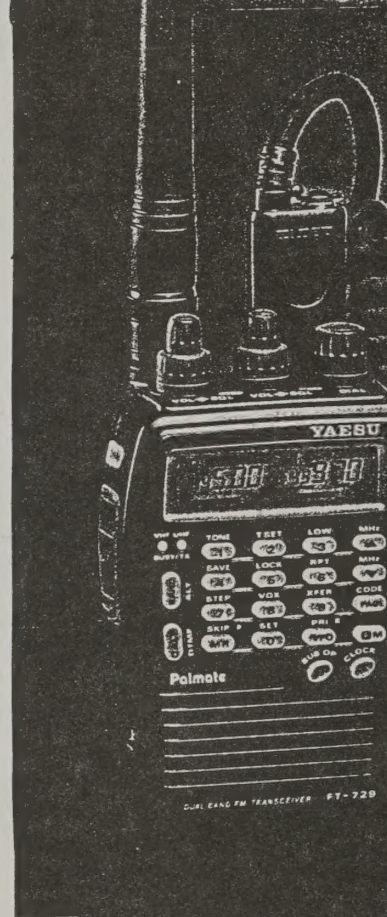
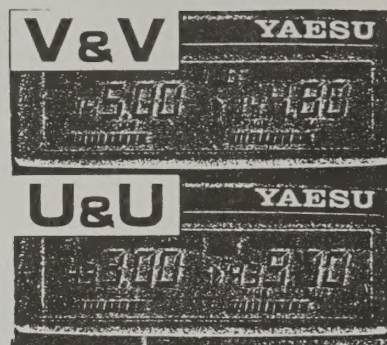
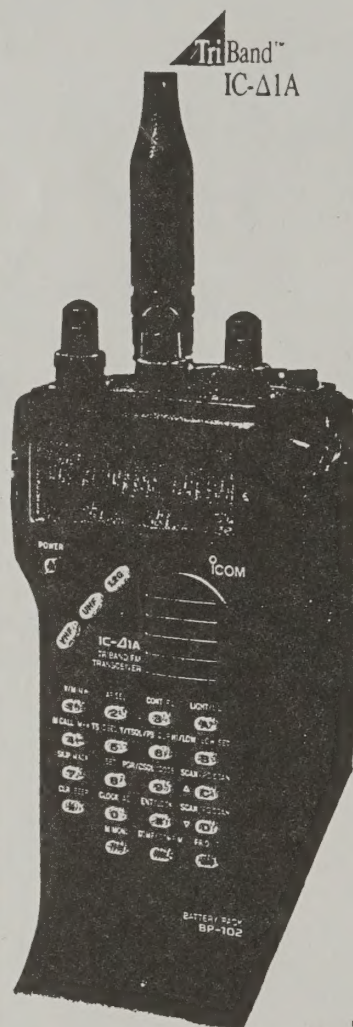
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ABOUT THE COVER



EME in a milk crate? Larry Kayser, VE3PAZ, sits on the crate, operating two-metre EME from the dock at a lakeside QTH last summer. For the full story, see "Remote Antenna Systems" on page 3. ■

It Seems to Us.../Il nous semble...

Another Use for Linear Translators

The February issue of *QST Canada* carried some commentary by Earle Smith, VE6NM, (DOC liaison-designate for RAC's initial caretaker board of directors) regarding tower problems. Earle first floated this concept out to me in October 1992. It certainly has merit.

It's funny how things come around. About 33 years ago, a group of prominent Toronto amateurs including Martin Rosenthal, VE3MR, and Ted Sparrow, VE3BQN, set up a "remote base station" with linear translators—like the one Earle suggested—south of Orangeville, Ontario. It used the call VE3ZZZ, and it was an awesome setup with almost 200 feet of tower, big-stick VHF antennas covering 50 through 1296 MHz via a full duplex link at 420 MHz back to Toronto, and full remote-control tuning. I know, because I visited the station and operated it. However, the analog technology of the day, the use of vacuum tubes, and the need for constant maintenance spelled its ultimate undoing.

In the early 1970's, VE3FKU in Sudbury and VE3FKX in Toronto had a linear translator running up near Orangeville to facilitate communications between northern and southern Ontario. The system worked quite well, but again technology and local noise caused problems with reliability. It was shut down after wide-band noise caused interference to the DX part of the band.

And so came the end of Canadian work on linear translators—or did it?

It hasn't stopped, of course. Instead it has moved from a terrestrial to an extra-terrestrial variety. Our OSCAR satellites make highly reliable use of linear-translator technology to provide efficient access to DX for thousands of satellite users on VHF and above. No big towers, no large antennas, and only the minimum amount of power for communications is needed for access to our orbital linear-translator network. Yet today Canadians are generally ignorant of our satellite capabilities and don't support AMSAT as dues-paying members.

So, if you want to experience DX using linear translators, get on the satellites and try them out. It's fun and environmentally friendly! Also, join AMSAT. Your support will help to bring us the next generation of super satellites—built and financed by amateurs for amateurs!

Back on earth, translators passed out of the collective conscience as VHF gear got better and better. Thanks to the hard work of the moonbounce and weak-signal groups worldwide, we gained a better understanding of antenna technology. We pushed the state of the art to develop superior antennas. We combined this with ultra-quiet receivers and *voilà!* we found that we could work DX above 50 MHz—over vast distances with relatively low power.

Suddenly it became attractive for amateurs who avoided VHF DXing to get on with modest installations and really enjoy themselves. Since then we haven't looked back. Today, single-yagi stations running 180 watts are racking up DX contacts via moonbounce. These same stations are making great use of aurora, sporadic E and tropo to work DX across Canada direct, with no links or repeaters.

But today, as Earle said, looks like a good time to have another look at terrestrial linear translators. Unlike Earle, however, I favour their use at VHF-UHF, not as a solution for problems associated with HF communications, but for VHF-UHF access as the logical next step in the evolution of our existing repeater systems.

We are running out of two-metre and 70-cm repeater pairs in Canada. In major centres there are none left. So what can we do? The Amateur Radio community continues to avoid the 50- and 220-MHz bands for FM repeaters, with the lame excuse that there is no "cheap" surplus commercial equipment for these bands. Perhaps we should look at the way we use frequencies and adopt something more spectrally efficient. Perhaps we should stop being so conservative and *non-amateur* in our outlook, and get back to building and modifying gear as we did during the dawn of the repeater age. Perhaps it's time we went *digital* and started thinking about linear translators as a solution for the future. Perhaps translators could be set up with OSCAR gateways so that the Basic-qualification amateurs could work DX at VHF. Perhaps we could see a blending of voice and video technologies to replace ATV and allow us to cram more video into less spectrum—sort of "multimedia computing".

Let's not forget that we are a diverse

It Seems—continued on page 4

SPECIAL NOTE

This issue of *QST Canada* is being sent to all CRRL members in the British Columbia Section. It contains a legal notice pertaining to Section Manager elections. —Ray Staines, VE3ZJ ■

All letters are considered carefully. Letters are edited for clarity and may be condensed in order to have more information and readers' views presented. The publishers of *QST Canada* assume no responsibility for statements made by correspondents.

MUF AND "CRITICAL FREQUENCY"

I would like to clarify a misconception about "critical frequency" (f_c), and "maximum usable frequency" (MUF), which appears in the *CARF Amateur Study Guide* and also occurs in Paul Dunphy's excellent article on seasonal propagation (1993 January *QST Canada*), where he used the terms interchangeably.

Critical frequency is the maximum frequency of a test signal that will be returned to earth from the ionosphere. This test signal is transmitted *straight up* from a transmitter whose frequency sweeps slowly from the low end to the high end of the HF

region. The carrier is keyed, and the "echo" from the ionosphere is heard and recorded on earth at the transmitter location. Time delays between transmit and receive pulses, and the strength of the received signal, are indications of the height and reflective properties of all layers of the ionosphere *over that point on earth*.

Typical critical frequencies are in the region of 5–10 MHz and rarely exceed 15 MHz. The critical frequency can be used as a rough approximation of what the MUF may be, since it is mathematically related to the MUF. If the critical frequency is high, the MUF will be high as well.

There is only one value of critical frequency for a given ionospheric layer in a place at a certain time of day.

Maximum usable frequency is the maximum frequency that will be refracted back to earth over a given path between two separate points—in other words, the highest frequency that can be used for sky-wave propagation between two points. There are as many values of MUF as there are points on earth. The MUF also depends on the angle of incidence (Θ), where the radio wave enters the ionosphere. Note that Θ is the angle between the signal path and the vertical. Amateurs tend to think in terms of the angle between the signal path and the horizontal, which is the launching angle.

The MUF and critical frequency are related by the "secant law" which states that $MUF = f_c \sec \Theta$. Since it is difficult to find secant functions on calculators, we use the reciprocal or cosine instead: $MUF = f_c / \cos \Theta$.

If the critical frequency were 10 MHz, a signal launched at 45° would also have an angle of incidence of about 45° . Thus, $MUF = 10 \text{ MHz} / \cos 45^\circ = 14.1 \text{ MHz}$. Reduce the launch angle to 20° and the angle of incidence would be about 70° , and the MUF would increase: $MUF = 10 \text{ MHz} / \cos 70^\circ = 29.2 \text{ MHz}$. Note that these are for two different paths

We need to define "virtual height" as the theoretical point in or above the ionosphere where the incident and refracted waves appear to have a reflection point. For the 45° example, assuming a virtual height of 200 km over a flat earth, the skip distance would be about 400 km. For the 20° launch angle, assuming the same conditions, the skip distance would be about 1100 km.

It is unwise to operate at exact MUF, as the value fluctuates with time of day. The path or circuit can be cut off just as if someone opened a switch—as we often experience on six and ten metres. We therefore allow a safety factor and use the Optimum Traffic Frequency or Optimum Working Frequency (OTF or OWF), which is taken as about 80 per cent of the MUF for a particular path. —F. Cooper, VE3FC

The Canadian Radio Relay League, Inc La Ligue Canadienne de la Radio Amateur, Inc



The Canadian Radio Relay League (CRRL) is a noncommercial association of radio amateurs organized for the promotion of Amateur Radio communications and experimentation, for the establishment of networks to provide communications in the event of disasters or other emergencies, for the advancement of the radio art and the public welfare, for the representation of radio amateurs in legislative and other matters, and for the maintenance of fraternalism and a high standard of conduct.

CRRL is incorporated under the Canada Corporations Act. Its affairs are governed by a seven-member Board of Directors elected every two years by the CRRL general membership. CRRL is noncommercial, and no one who could gain financially by the shaping of its affairs is eligible for membership on its Board.

CRRL is the Canadian member-society of the International Amateur Radio Union (IARU). "Of, by and for the Canadian Radio Amateur", CRRL numbers within its ranks the vast majority of active amateurs in the nation and has a proud history of achievement in amateur affairs.

A bona fide interest in Amateur Radio is the only essential requirement for membership. An Amateur Radio licence is not required, although full voting membership is granted only to licensed amateurs in Canada.

Membership inquiries and general correspondence should be directed to CRRL Headquarters, Box 56, Arva, ON N0M 1C0 Tel (519) 660-1200.

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Remote Base Stations

An Ottawa amateur deals with urban operating problems...

By Larry Kayser, VE3PAZ/WA3ZIA
49A First Avenue
Ottawa, ON K1S 2G1

Regarding Earle Smith VE6NM's interesting proposal on remote bases (It Seems—1993 February *QST Canada*), it has all been done, either experimentally or in practice!

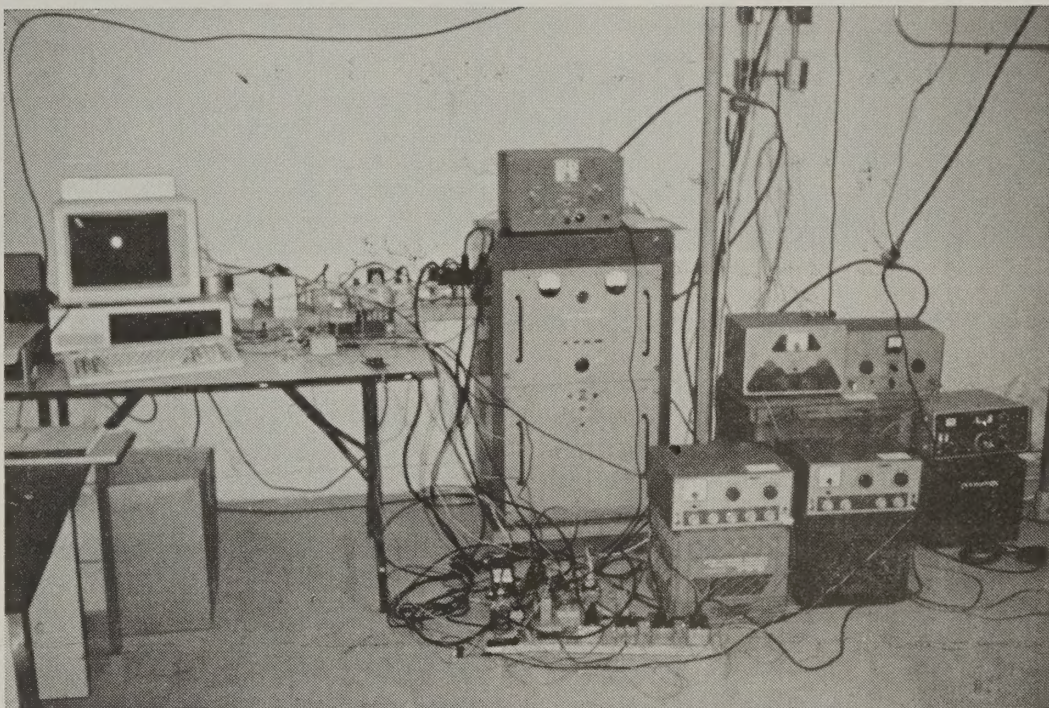
I have had three remote base systems over the years. The first was at Nakina, Ontario, 200 miles from Channel 2 in Thunder Bay, around 1964. I had an agreement to maintain a VHF telephone link for the local telephone company. They provided me with a copper pair out to the VHF site. I managed, using some polar relays, to get several functions out of two wires and ground, with selenium rectifiers and a 130-volt teletype-loop power supply. I had ac control, keying, and, if I recall correctly, two crystal-controlled channels some six miles away.

Later, around 1971, I repeated this setup in Ottawa. This was a more ambitious setup with a kilowatt on 40-metre CW, again on only a few crystal-controlled channels. The control link was on VHF and its use was limited. It was essential to solve the VFO problem. But the concept of using a remote transmitter was established, and I knew it was the way to go for serious CW operation, a primary interest of mine on HF.

The arrival of the digital VFO, specifically in the DDS (direct-digital synthesis) concept, spurred me on to try once again. In 1991, I bought a DDS prototype board to experiment with. Then Bruce, VE3JIL, introduced DDS on a card that could be plugged into an IBM PC. Instantly, I was back in the remote HF business.

In July 1991, some friends installed some antennas at a then unused commercial site east of Ottawa. This is now the home of the east-end receiver of the Pioneers Amateur Radio Club repeater, VE3TEL. They installed a 40-metre sloped dipole and an 80-metre horizontal dipole on a 200-foot tower. Rick Gundonie, VE3NJM, did the antenna work.

The picture above shows the equipment at the site in January, 1993. The "original" IBM PC with modem connects to an AEA Morse Machine MM3 keyer. The aluminum box on top of the monitor was designed by Stan, VE3JBA. It decodes the output at the printer port of the PC and does the ac and relay control



Remote equipment at the east-end receiver site of the Pioneers Amateur Radio Club repeater, VE3TEL, in Ottawa. (VE3PAZ photos)

functions.

The exciters are all Heathkits because I had a few for antenna experiments, and they would be cheap to replace if I blew one up. The DX-35 is for low power on 40-metre CW. One DX-60 drives the old RCA PL-172 to a kilowatt on 40-metre CW. The other DX-60 is modified for 30-metre CW. The DX-40 is tuned up for the bottom end of 80 metres. The antique AT-1 is crystal-controlled on 3.677 MHz for the New York State CW net. The FT-101B is used on 3.7-MHz SSB.

The station evolves whenever I have time to visit the site and work on it. My main interest is 80-, 40- and 30-metre CW. For SSB, I have an FM link out to the site, and by next summer I expect to have a return link on 440-MHz FM. All the hardware is now in place, thanks to friends who made donations. All that remains now is to get the 440-MHz transmitter antenna up the tower. I'm just waiting for some nice weather.

I have worked over 50 countries on my occasional forays down to the bottom of the 40-metre band, but my main interest is working the CFO CW crowd around 7.033 MHz, and working CW at

45 words per minute plus. Some day, I will be competent to run with the really high-speed guys over who operate at 60 words per minute. That is my goal!

Control of this station is via a dialup telephone line. It is done using standard off-the-shelf modems that are now in the \$40 class. I pay for a local telephone line to the site—\$11.04 per month. The PC is ex-commercial service, with a value under \$50 (no hard drive, just two floppies—an 8088!). The software is now about 1000 lines of hacked source code, all compiled. I can upload new versions from my home as needed. I rarely visit the remote site except to make hardware upgrades. The system is occasionally used by other locals who have an IBM-PC compatible at home, and an HF receiver.

This is how I want my Amateur Radio for right now. But there are problems. My reception in the city is awful. I have several "RF-noisy" PCs in my immediate area, and two large LAN's within a few hundred feet of my home. Reception is definitely the next problem to be solved. I have pieces of a remote-control linear-translator system to backhaul an IF of



Larry, VE3PAZ's dockside EME antenna system—the day he worked SM7BAE.

a remote-control selected 1-MHz-wide chunk of HF. I also have pieces for a more simple, less elegant 440-MHz FM link to backhaul a remote receiver. The latter is a more realistic option and will probably exist by this summer. If someone has some surplus microwave gear that I can pull into a nearby amateur band, I will do the backhaul IF trick. It would be nice to do it that way!

I have built and experimented with multiple user linear repeaters from VHF to HF. This type of technology is very difficult to use in Amateur Radio environments. The problem is always how to share transmitter power in a linear environment. This will need extensive future development some day.

In the other direction, I once ran a remote 20-metre to 438-MHz "receivert-er". This permitted me to have a remote 20-metre whole-band repeater, until the tubes died a natural death after key-down service of almost six years! These things are not hard to do, and they do work. All we need is an Amateur Radio community that can differentiate between establishing its "rights" and the desire to operate HF from superior sites! Once I established my goal—high-speed CW and some technical fun—I simply took it one step at a time until I had a basic system that worked.

A friend of mine, Harold Price, NK6K, once said that in Amateur Radio today, we build as much as we ever did. We just build with bigger pieces. I have always enjoyed taking bigger pieces—pieces like computers and old Heathkits and software, and we make bigger systems. Do you not agree that this is "homebrewing" in the best tradition?

Speaking of my liking for technical fun, the picture above recalls the fun I had last summer, operating two-metre EME from a rented cottage. The yagi in the picture is mounted on the boat dock, and makes excellent use of "ground gain" achieved from the lake in front of the cottage. The ground gain from the lake is higher by at least 4–6 dB than it would be over land. The antenna is a single 2M5WL with a boom over 30 feet long. The exciter, shown in the cover picture, is a TR-751A multimode rig feeding a 170-watt brick. I made a dozen EME QSOs last summer. I have now added a *big* amplifier and will be at a new island QTH next summer.

Another remote site that I have is an AMSAT satellite station, courtesy of and with the help of George, VE3BNO. We automatically collect telemetry data from AMSAT microsats 16, 18 and 19. Our local Ottawa group supplied the battery systems for AMSAT satellites 11, and 14–19. Since retiring, Dick, VE3JBO, has decided to take on AMSAT satellite battery development as a personal project.

For me, this is what Amateur Radio is all about: having fun and doing things with the help of my friends. I am grateful to my Elmer, Jim, VE4VJ (now deceased), who set me off on the right track 40 years ago. I am also grateful for all the fun I have had over the years. My main achievement has been to set a goal, focus on it, and finally make it happen. I have learned this in stages and I continue to refine my techniques. And as I do so, I continue to have fun. My goals do not include wasting time with the regulatory authority—or local authorities—over vexing questions of towers and antenna structures. What about you? ■

It Seems—continued from page 1

lot. We all have our favorite bands and modes. We need to understand each other's needs, so that we can evolve without stepping on one another's toes. That means abiding by a uniform set of band plans for 160 metres through to 3 centimetres, bandplans like those promulgated by IARU and CRRL.

Let's all make better use of HF. Let's adopt new highly efficient digital technologies for forwarding messages on HF. Let's not forget to keep our stations "clean" and to operate with the minimum amount of power necessary for communications, instead of running the kilowatt all the time. Let's continue to be good neighbours and put up towers that are aesthetically pleasing so that we don't become targets. Let's do some public relations work with our neighbours so that they don't view our activities with a jaundiced eye. And let's keep in touch with our local DOC officials and make sure they are convinced that Amateur Radio's many fine activities are worthy of their support.

CRRL AND CARF NOW WORKING TOGETHER ON TOWER PROBLEMS

The presidents, other officers and directors of CARF and CRRL are working as one to head off the plethora of problems we will face if DOC continues to try to force us into a straitjacket on towers, as they appear to be trying to do with Client Procedures Circular (CPC) 2–0–03. We believe that Amateur Radio activities should not be subject to interference by municipal authorities. As long as we operate within the terms of our licence, we should be free to erect towers and string up antennas as we please.

We have technical solutions that can enable us to adapt as a group, but we need your help. We need your money to help pay for our lobbying efforts and to help finance the increasing complexity of dealing with a decentralized bureaucracy. We need volunteers to help with this important work.

I have been making the rounds of clubs in Toronto, to talk about RAC, and have been handing out membership forms for both CRRL and CARF, urging everyone to join up. Now I challenge every CRRL member and every CARF member to get out and sign up at least one new member—*now*. We must get RAC off to a flying start as soon as we dissolve CRRL and CARF. Don't wait until later. Sign up your friends and all the new amateurs today. CRRL General Manager Ray Staines, VE3ZJ, is ready to help by supplying the forms. —Dana Shtun, VE3DSS, President, CRRL ■

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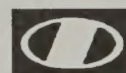
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16 MARS
1993



ICOM

The British Columbia Ambulance Service and Amateur Radio

By Art Jackson, VE7FED
Box 4, 7568 Mark Lane, R R 5
Victoria, BC V8X 4M6

In British Columbia, there is only one ambulance service. The government-operated British Columbia Ambulance Service is part of the Emergency Health Services of the BC Ministry of Health.

BC Ambulance has more than 800 full time, and several thousand part-time paramedics and dispatchers who responded to 341,000 ambulance calls last year. The air ambulance responded to 6600 calls.

With only one company involved in setting up province-wide standards for equipment, training and operating routines, flexibility and efficiency are easy to maintain. This provides an excellent network of resources, able to respond to any need. Because of this, the BC Ambulance Service will be able to respond well in the event of a large scale disaster.

Throughout the world, Amateur Radio operators are often the first to provide reliable radio communications in time of emergency or disaster. The British Columbia Provincial Emergency Program (PEP) Amateur Radio Service maintains and operates an Amateur Radio station in Victoria. Its call sign is VE7PEP, and it holds practice nets weekly on VHF as well as on 80 and 40 metres. In the Greater Victoria area, all municipal emergency programs have an associated Amateur Radio organization that takes part in weekly practice nets on two metres. Stations in the municipalities then check in with VE7PEP. Some years ago, when telephone lines were overloaded following the Edmonton tornado, Victoria amateurs forwarded more than 400 inquiries for the Victoria branch of Canadian Red Cross—almost all of them by packet radio via VE7PEP and VE7UBC. Replies to most inquiries were received within 24 hours. As a result of this demonstration, the West Coast Amateur Radio Association now holds classes and meetings, and maintains Amateur Radio Station VE7VCC at Red Cross in Victoria.

In both the US and Canada, amateurs provide auxiliary emergency communications for sheriff, police and fire departments, and other emergency response organizations. In any British Columbia disaster, the BC Ambulance Service will no doubt be deeply involved. The geography of the province makes the possibility of a communications disruption almost certain, and distant isolated communities may well depend on Amateur Radio to

communicate with the outside world.

In the past, BC Ambulance Service employees who were Amateur Radio operators—Superintendent of Communications Maurice Girard, VE7FJ, Communications Technologist John Tones, VE7PF, and Provincial Dispatcher Art Jackson, VE7FED—often discussed the value of Amateur Radio to the BC Ambulance Service. It was obvious that many amateurs might not understand the full ramifications of air ambulance requirements, and dispatchers might not understand the capabilities and limits of Amateur Radio. The difficulty of installing an Amateur Radio station and explaining its use during an emergency were obvious from the first. The solution was to have Amateur Radio operators who were also Emergency Medical Dispatchers (EMDs).

When it became evident that several provincial dispatchers—EMDs specifically trained as air ambulance coordinators—were interested in obtaining their Amateur Radio qualifications, the decision was made to install an Amateur Radio station in the dispatch office—the Provincial Air Ambulance Co-ordination Centre in Victoria—to encourage all provincial dispatchers to obtain Amateur Radio qualifications. Later, when sufficient dispatchers in the Vancouver, Victoria and Kamloops regional (road ambulance) dispatch centres obtained their Amateur Radio qualifications, those centres would be equipped with Amateur Radio stations as well.

The dispatchers hit the books for several months, studying radio and electrical theory, Ohm's law, radio wave propagation, antenna theory and construction, and of course the Radio Act and other regulations. Their efforts paid off, and all full-time provincial dispatchers, except one who was on maternity leave, have now obtained at least their Basic qualification. The next step will be to learn their Morse code and fulfill the requirements that will allow them to operate unsupervised the long-distance HF transmitters.

Some dispatchers obtained Amateur Radio licences and now have their own call signs. Our newly qualified operators are John Brickett, VE7JGB; John Shea, VE7HDI; Meredith Connell, VE7JFL; Stew White, VE7SHW; and Laurie LeBlanc, and Grant Hoban.

In Vancouver, Airvac Advanced Life Support (ALS) paramedics Bruce Brink

VE7CHG, an Amateur Radio operator for 20 years, and John Wilcox, VE7EMA, an Amateur Radio operator for five years, have been joined by fellow ALS Airvac paramedic and a newcomer to the ham bands, Tom Sheldon, VE7HLE. Emergency Medical Assistant (EMA) paramedic Ted Swan, VE7ICP, represents the Fraser Valley, and ALS paramedic Gary Wagner of Kamloops, after many years of thinking about it, is now VE7RLD. There must be others out there. If you are a BC Ambulance employee and an Amateur Radio operator, please let us know.

The station for Provincial Air Ambulance is in place. Its call sign is VE7PAA. It consists of an IC-725 100-watt HF transceiver with an automatic antenna tuner feeding a 40-foot wire antenna, and an IC-2410H 50-watt dual-band VHF-UHF transceiver feeding a dual-band vertical antenna. An efficient array of directional and wire antennas are planned for the Provincial Air Ambulance Coordination Centre when it moves into new offices later this year. They will be in the Shell FBO now under construction at Victoria International Airport.

During early testing of the station transmitter, VE7PAA, made contact with an Australian amateur, VK5ZH, near Adelaide, as well as with several amateurs throughout the province. It is hoped that a disaster may never occur. But if it does, the Provincial Air Ambulance Coordination Centre—with Amateur Radio support—will be prepared to cope. ■

BOOKSHELF PRICING

The federal government subsidy to Canada Post for the mailing of books ended on 1993 February 28. CRRL Publishing's Bookshelf pricing on page 12 reflects the new situation. If you order multiple titles in one shipment you will probably send too much postage, since prices change with each 0.5 kilogram, and each increment is much smaller than the initial charge. CRRL Publishing will continue its practice of issuing a credit note for any excess postage sent to it. —Ray Staines, VE3ZJ, CRRL General Manager ■

THE CANADIAN RADIO RELAY LEAGUE, INC.

ANNUAL MEETING OF MEMBERS

IN ACCORDANCE with the By-Laws of the Canadian Radio Relay League, Inc. (CRRL), take notice that the 1993 and last Annual General Meeting of the Canadian Radio Relay League, Inc. will take place commencing at 0800 EDT on Saturday, 1993 May 01, in the Hickory Room at the Ramada Hotel-Airport West, 5444 Dixie Road, Mississauga, Ontario (just off Ontario Highway 401 near Pearson International Airport).

TAKE NOTICE that at the Annual General Meeting, members will be asked to vote on the following resolutions which are a formal requirement for the dissolution of CRRL and the merging of operations with Canadian Amateur Radio Federation, Inc. (CARF) into Radio Amateurs of Canada:

1) The Canadian Radio Relay League, Inc. has only held occasional annual membership meetings, preferring instead to carry out the balloting of its members by mail. In order to confirm the acts carried out by CRRL in the past, the Board of Directors consider it necessary and appropriate to call an annual membership meeting in accordance with the legislation under which CRRL is incorporated, to present to the members a resolution which confirms all acts of CRRL, and the acts of its officers and directors from the date of incorporation. This resolution will allow the "merger" of operations of CRRL and CARF into Radio Amateurs of Canada and the eventual dissolution of CRRL and CARF.

2) Due to the impending dissolution of CRRL and CARF, and activities leading to the creation of Radio Amateurs of Canada/Radio Amateurs du Canada (RAC), the elections of directors in accordance with the By-Laws of CRRL were not held, to avoid unnecessary costs in anticipation of that merger. As a result of the successful vote on the special resolution to merge operations with CARF, it is believed to be in the best interests of CRRL to simply extend the term of the present Board of Directors. This is provided for under the governing legislation. Members will simply be asked to confirm that the terms of members of the present CRRL Board of Directors, namely:

David Fancy	—	Pacific Director
Ken Oelke	—	Alberta Director
David Snyder	—	Midwest Director
Raymond Perrin	—	Ontario North Director
George Gorsline	—	Ontario South Director
Larry Dobby	—	Quebec Director
Carl Anderson	—	Atlantic Director

are extended for the period 1992 January 01 to 1994 December 31, or date of dissolution of CRRL.

MEMBERS ARE asked to bring with them identification or their current CRRL membership card. In addition to voting on the foregoing resolutions, the Officers and Directors of the Canadian Radio Relay League, Inc. will be in attendance at the meeting to answer questions from members dealing with the creation of Radio Amateurs of Canada/Radio Amateurs du Canada.



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QRP Operation

International Q-signals define QRP as "Shall I decrease power?" QRP operation by amateurs means radio contacts using very low power. But how low?

The World QRP Federation defines QRP as five watts dc output or ten watts dc input for CW. Less than five watts output would be described as QRPP. Many amateurs worldwide operate QRP to maintain schedules, enter contests and achieve DXCC awards. This is really no big deal in years of high solar activity when band conditions are good. What is impressive, however, is the use of power levels of milliwatts and microwatts over very great distances on the HF bands.

Proof of two-way contacts on SSB with over 300 ARRL DXCC countries has been confirmed by a number of British and US amateurs. Indeed, ARRL DXCC Honour Roll was achieved by Ronald Moorefield, W8ILC—and perhaps others. Yes, proven two-way contacts both initiated and completed with *under one watt* of RF output! Impressive stuff, and sort of makes the use of a 1000-watt burner obscene, doesn't it? And maybe even DX nets....

Let's examine the theoretical implications of decreasing power. Imagine a QSO in progress. Both stations are 599. Suppose one of the stations, operating at 150 watts dc input, reduces power to 5 watts. This is a ratio of 30:1, corresponding to a 15-dB drop. Assuming 6 dB per S-unit, it represents a decrease in signal strength from S9 to S6–S7. If power is further reduced to 150 milliwatts, which is another decrease of 15 dB, signal strength would drop to S4. A further decrease of 15 dB would show a reading of S1–S2, and the input power would now be 5 milliwatts. Assuming a clear frequency without QRM, QRN or QSB, a successful QSO could result. Then look at the possibilities with reports of 20 plus dB over S9, which are common on "peaking" signal paths. This is the stuff that microwatt QSOs are made of!

Simply turning down the gain on a 100-watt transceiver can allow anyone to become a QRP operator—a fact so obvious, but misunderstood or ignored by many. A power bridge will initially be necessary to measure output, and that's it. However, when operating at levels under five watts, a need will exist to make minute measurements. Existing output meters can be modified with resistors, switches etc. And with the use of an oscilloscope the meter's range can be extended from perhaps 200 microwatts to five watts output in, say, three separate ranges.

QRP operators seem to be a "breed apart". They find it challenging to get the most mileage out of a milliwatt. They seem to derive much pleasure from "homebrewing" much or all of their radio gear and their antenna systems. Miniaturization is often a desired objective, and some feel that "small is beautiful". Successful QRP operators will have realized that effective antenna systems are of major importance, and that feedline losses must be kept as low as possible. They know full well that success or failure can be determined at this point. It may also be desirable to remove the SWR bridge, antenna switches and so on, to reduce losses once the initial setup has been completed, the tests have been carried out and parameters are known. By using five watts as opposed to 150 watts, we are already giving away 2.5 S-units, so no more giveaways or losses should be accepted due to inefficient feed lines and antennas.

Why do QRP operators do it? What makes a QRP operator "tick"? Why do pool players "spot" or give away points? Do people perform better when challenged? Is this a form of technical arrogance? Boredom? Fear of causing TVI? Perhaps it's "hamming by the seat of the pants", the "open cockpit" of testing frontiers, equipment and propagation theory, of knowing just what is possible. Perhaps it's also the sense of camaraderie amongst peers. In any event, it's Amateur Radio at its finest! Become a proficient QRP operator for a while, and when you return to usual power, I guarantee that your DXCC country totals will increase dramatically.

The following calling frequencies are used by QRP operators worldwide. No WARC-band frequencies are available:

Band	CW	Phone
160	1810	
80	3560, 3710	3985
40	7040, 7110	7285
20	14060	14285
15	21060, 21110	21285
10	28060, 28110	28885
6	50060	50385

Here are a few techniques that will increase your effectiveness as a QRP operator:

- Call CQ QRP sparingly on the calling frequencies in Morse code at about 12 wpm. Use three strings of three by three. Then carefully tune two kHz above and below your transmit frequency. This is essential: use the RIT on receive and *do not* adjust your transmit frequency. Let the other station "zero beat" to you.

- Listen for stations calling CQ, and wait to see if anyone is responding. Remember that you need a quiet frequency. If there is no reply from the others, go for it! It is often better to place emphasis on the call sign of the station you are calling, not your own, to get attention.

- Listen for the strong signals of stations in QSO. When the stations sign, quickly call the stronger. If you get no response, call the other. Most stations are happy to exchange signal reports with a QRPer, and many will be actively interested in your operation.

- Don't be afraid to work the small "pileups". Often, smart operating practice will yield more success than brute force. The trick is to drop your QRP signal into a quiet gap in the QRM. Often QRPer and mobiles will get a break, sometimes from the DX, but more often from someone in the pileup. The thrill of it all is when you succeed!

- Great QSOs can be had on phone with only four or five watts output, but CW is the mode of choice for QRP. Learn how to "zero beat" properly on CW. Be armed with the fact that many amateurs don't know how to zero-beat to within one kilohertz of a caller's frequency.

- All contacts must be initiated and completed at the power level claimed. To call CQ while QRO and then reduce power is "not cricket".

I have this fantasy of a working in a pileup where everyone's power is limited to QRP and the "policemen" are all absent. Ah, yes—horses can fly! ■

April Contests

Spring QRP ARC CW QSO Party –
SP-DX Contest (CW) –
April 3–4
ARRL 144-MHz Spring Sprint –
April 5
Japan International DX Contest (CW) –
April 9–11
Holy Land Contest –
April 10–11
ARRL 222-MHz Spring Sprint –
April 13
DXYL-NAYL Contest (CW) –
April 14–15
CRRL QST QSO Party –
MARAC County Hunter's Contest (SSB) –
SARTG AMTOR Contest –
April 17–18
ARRL 432-MHz Spring Sprint –
April 21
Helvetia Contest –
April 24–25
DXYL-NAYL Contest (phone) –
April 14–15

SPECIALS FOR APRIL '93



(SPECIALS IN EFFECT FROM MARCH 29, 1993 TILL APRIL 30, 1993)

IC-728 New 100Watt HF Rig with General Coverage Receiver	\$1175	save \$106	now \$1069
IC-728 PS-55 AT-160 Complete HF Station \$1175+269+459=	\$1903	save \$204	now \$1699
IC-2330A 2M/220MHz mobile	\$879	save \$64	now \$815
AT-160 Auto Antenna Tuner for 728/729	\$459	save \$74	now \$385
IC-751A HF 100W with General coverage Receiver	\$1749	save \$100	now \$1649
P2AT 2M Handy with Large Display	\$449	save \$38	now \$411
IC-W2A Dual Band Handy	\$629	save \$54	now \$575
R-72A HF Receiver	\$1239	save \$240	now \$999
PS-70 2 Amp Handheld Power supply-runs anything up to 2 Amps (Keyers etc)	\$99	save \$74	now \$25

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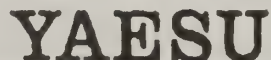
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(SPECIALS IN EFFECT FROM MARCH 29, 1993 TILL APRIL 30, 1993)

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TS-50S Now in Stock--Call for Special Quantity Price--Get 3 Guys together and Save!!



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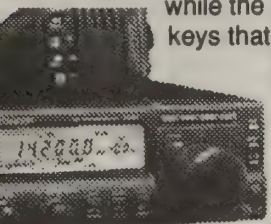
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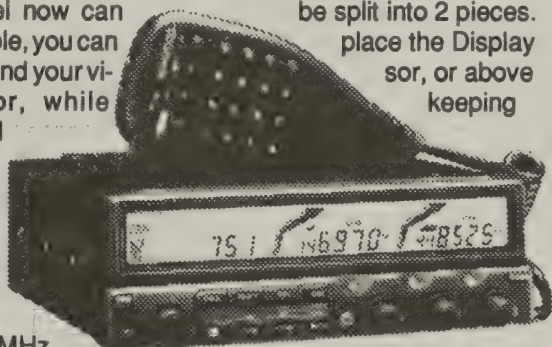
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BEGINNERS

Operating an Amateur Radio Station	1.25	1.75	3000	<input type="checkbox"/>
First Steps in Radio	6.50	2.25	3010	<input type="checkbox"/>
Premiers pas en radio, W1FB (RAQI)	7.25	2.25	2020	<input type="checkbox"/>
En Ondes	12.00	2.25	2030	<input type="checkbox"/>
Help for New Hams, W1FB	12.50	2.25	3020	<input type="checkbox"/>
Morse Code-Essential Language 2nd Edition	7.50	2.25	3025	<input type="checkbox"/>
Understanding Basic Electronics	21.25	2.75	3030	<input type="checkbox"/>
Low-profile Amateur Radio	10.00	2.25	3050	<input type="checkbox"/>

INSIGNIA

Lapel Pins (OT)	3.00	1.00	1500	<input type="checkbox"/>
Cloth Diamond 5" (OT)	3.00	1.00	1520	<input type="checkbox"/>
Cloth Diamond 3" (OT)	2.00	1.00	1510	<input type="checkbox"/>
ARES Circular Patch 4" (OT)	4.00	1.00	1530	<input type="checkbox"/>
Set of 3 CRRL Logo Decals (OT)	1.00	1.00	1590	<input type="checkbox"/>

OPERATING AIDS

Log Books-pack of 3 (OT)	10.00	3.00	1700	<input type="checkbox"/>
Super Log Books-pack of 3 (OT)	16.00	3.00	1710	<input type="checkbox"/>
Radiogram (message) Pad (OT)	2.00	1.75	1730	<input type="checkbox"/>
DXCC Countries List (Revised) (OT)	2.50	1.75	2512	<input type="checkbox"/>
Grid Locator for North America (OT)	1.50	1.75	2520	<input type="checkbox"/>
Net Directory (OT)	2.50	1.75	2531	<input type="checkbox"/>
World Map (ARRL) (OT)	15.00	3.75	2551	<input type="checkbox"/>

VHF & UP

Your VHF Companion	10.00	2.25	6505	<input type="checkbox"/>
Beyond Line of Sight	15.00	2.75	6515	<input type="checkbox"/>
UHF / Microwave Experimenter's Manual	25.00	3.00	6510	<input type="checkbox"/>
Microwave Handbook Vol. 1 (RSGB)	43.75	2.75	6520	<input type="checkbox"/>
Microwave Handbook Vol. 2 (RSGB)	43.75	2.75	6521	<input type="checkbox"/>
Microwave Handbook Vol. 3 (RSGB)	43.75	2.75	6522	<input type="checkbox"/>
Satellite Anthology 1st Edition	9.50	2.25	6530	<input type="checkbox"/>
Satellite Anthology 2nd Edition	10.00	2.25	6531	<input type="checkbox"/>
Satellite Experimenter's Handbook 2nd Edition	25.00	2.75	6540	<input type="checkbox"/>
Radio Auroras (RSGB)	22.50	2.25	6565	<input type="checkbox"/>
Weather Satellite Handbook	25.00	2.75	6550	<input type="checkbox"/>

ANTENNA BOOKS

ARRL Antenna Book 16th Edition	25.00	3.75	4001	<input type="checkbox"/>
Antenna Compendium Vol. 1	12.50	2.75	4010	<input type="checkbox"/>
Antenna Compendium Vol. 2	15.00	2.75	4020	<input type="checkbox"/>
Antenna Compendium Vol. 3	17.50	2.75	4021	<input type="checkbox"/>
RSGB HF Antennas for all Locations	17.00	2.75	4300	<input type="checkbox"/>
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Antenna Notebook, W1FB	12.50	2.25	4030	<input type="checkbox"/>
Novice Antenna Notebook, W1FB	12.50	2.25	4040	<input type="checkbox"/>
Antenna Impedance Matching	18.75	2.75	4050	<input type="checkbox"/>
Transmission Line Transformers 2nd Edition	25.00	2.75	4060	<input type="checkbox"/>
Practical Wire Antennas	17.50	2.25	4090	<input type="checkbox"/>
Reflections	25.00	2.75	4070	<input type="checkbox"/>
Yagi Antenna Design	18.75	2.75	4080	<input type="checkbox"/>
Physical Design of Yagi Antenna	25.00	2.75	4085	<input type="checkbox"/>

TECHNICAL BOOKS

1993 ARRL Handbook	31.25	4.00	5002	<input type="checkbox"/>
ARRL Electronics Data Book 2nd Edition	15.00	2.75	5010	<input type="checkbox"/>
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Proceedings 11th Conference	15.00	2.25	6012	<input type="checkbox"/>

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Postage \$ _____

7% GST \$ _____

8% PST—(OT) items
Ontario residents only \$ _____

Amount of cheque \$ _____

Worked All Winnipeg Award

The Third Annual Worked All Winnipeg Award QSO Party will take place at 1500–2300 UTC, on Saturday 1993 April 3, 1993. Look for Winnipeg amateurs on or around the following frequencies: 14.165 MHz, 21.345 MHz and 28.350 MHz. If there is enough activity there will also be a group on 14.120 MHz.

Amateurs may earn the Worked All Winnipeg Award, sponsored by the Winnipeg Amateur Radio Club, at any time of year. The idea of the QSP party once a year is to stimulate interest and make it easier to achieve the required contacts.

Rules are straightforward. Stations in Manitoba, including the City of Winnipeg, must work at least 25 different Winnipeg stations. Stations outside Manitoba but within the North American continent must work at least 15 different Winnipeg stations. Stations of outside North America must work ten Winnipeg stations to qualify.

Contacts may be on any band using any mode, but all contacts must be direct and not through repeaters. Any contacts made on or after 1956 January 1 on may be counted.

QSL cards are not required. A certified copy of your log book, signed by two other radio amateurs who have checked the log, should be mailed with \$2 or six IRCs to Worked All Winnipeg Award, Dick Maguire, VE4HK, 598 St Mary's Road, Winnipeg, MB R2M 3L5.

CNIB "NIBS DAY"

This event celebrates the 75th anniversary of the Canadian National Institute for the Blind (CNIB). All radio amateurs, both visually impaired and sighted, are invited to contact stations VE1NIB, VY2NIB, VE3NIB, VE5NIB, VE6NIB and VE7NIB, on Wednesday, 1993 May 12, 1993 on 14.150 MHz at 1000–1600 local time, and on 7.065 MHz at 1600–2200 local time.

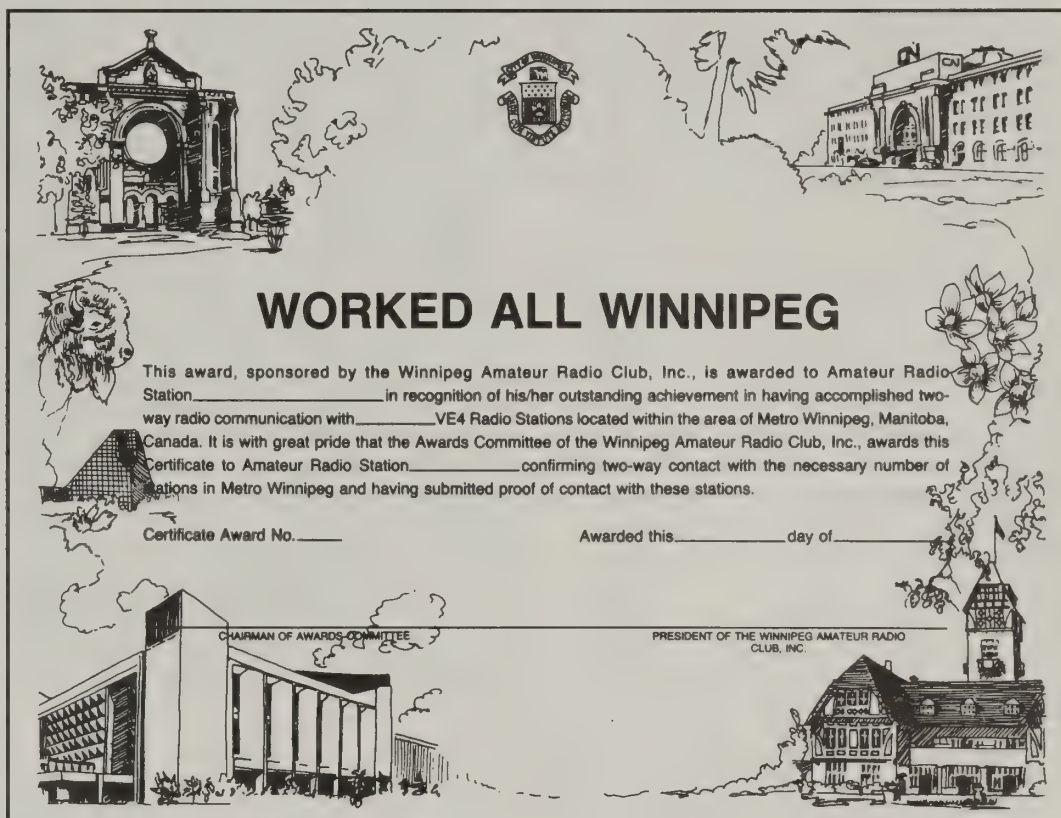
Certificates will be awarded to any amateur exchanging signal reports with four "NIB" stations and submitting logs to Will Melhuish, VE3AOY, Manager CNIB Amateur Radio Program, 1929 Bayview Ave, Toronto, ON M4G 4C.

1993 ARI INTERNATIONAL DX CONTEST

Date: 2000 UTC, Saturday, May 1 to 2000 UTC, Sunday, May 2.

Classes: Single-op CW, SSB, mixed and RTTY. Multiop single-transmitter mixed. SWL single-op mixed.

Bands: 160–10 metres excluding the WARC bands.



Exchange: Italian stations send RS(T) plus two letters to identify their province. Others send RS(T) plus a serial number starting from 001.

QSO points: Points per contact vary:

- With own country, zero points but good for multiplier credit
- With own continent: one point
- With a different continent, three points
- With any Italian (I, ISØ) station, ten points

Multipliers:

- All Italian provinces count one multiplier.
- All DXCC countries except I and ISØ count one multiplier.

Awards: A plaque and a certificate will be awarded to the top scorer in each class.

Logs: Logs must be mailed, within 30 days to of the end of the contest, to ARI Contest Manager I2UIY, Box 14, 27043 Broni (PV), Italy.

CRRL "QST" QSO PARTY

This year's spring event, sponsored by the Canadian Radio Relay League, is scheduled for 0000 UTC, April 17, to 2400 UTC, April 18. To qualify for the CRRL Worked "QST" Award, contact any eight of the twelve "QST-suffix stations" operating just above 3.75, 7.05, 14.11 and 21.25 MHz. To receive your award, send a stamped envelope or an envelope and one IRC to CRRL Awards Manager David Noon, VE3IAE, 19

Honeysuckle Cr, London, ON N5Y 4P3.

WINNIPEG PARKS BOARD

DOC has announced that, to commemorate the centenary of the Winnipeg Parks Board, amateurs living within the City of Winnipeg may use the special prefix XJ4 on 1993 March 26–April 9 inclusive. ■

Silent Keys—

Conducted By Ray Staines, VE3ZJ

It is with deep regret that we record the passing of these amateurs:

VE3AKH, Ted Davis, Rodney, ON
 VE3AKV, Lou Plummer, Stratford, ON
 VE3LJL, Larry Laforet, Bramalea, ON
 VE3MSC, Frank Collins, Ottawa, ON
 VE3WT, Howard Cowling, St. Catharines ON
 VE7AZ, Percy "Shorty Mac" MacDonald, Burnaby, BC
 VE7BIO, Philip Harvey, Cobble Hill, BC
 VE7DXL, Albert Beecroft, Victoria, BC
 VE7HB, H. Malcolm Carter, Victoria, BC

Note: Silent Key reports sent to QST Canada must include name, address and callsign of the reporter. To avoid unfortunate errors, reports are confirmed only through acknowledgement from the family of the deceased. Thus, those who report a Silent Key may not receive an acknowledgement from QST Canada. ■

World Series by Amateur Radio

Walden Schmidt, OA8BW, and Ron Barkey, OA8BE, are two Canadians working in the remote Amazon jungle of Peru. They work with Wycliffe Bible Translators, under contract to the Peruvian government, as the Summer Institute of Linguistics.

Linguists from the Summer Institute go into remote areas where the local languages have never been put into written form. They analyze the local language, and by working with the people, they develop an alphabet and describe the grammar structure. Then they set to work to translate the New Testament and parts of the Old Testament into the language.

Ron works in finance and Walden in the radio lab. Both are sports fans who miss their Canadian sports news. But Ron had a pleasant surprise at World Series time. Ron writes: "What do you do when your only 'live' sports is what you can decipher from WRNO, the 'Voice of Rock' in Louisiana? You don't listen to baseball, that's for sure.

"Since the Armed Forces Radio System (AFRS) abandoned the shortwave



Walden Schmidt, OA8BW, operating one of the radios used by translation teams working in remote the jungle villages of Peru. Ron Barkey, OA8BE, looks on. (A. Rossel photo)

medium, lots of faithful sports fans in the remote jungles have learned to live without *live* sports coverage. The wonders of technology have brought us the two-week old-football games (VCR to VCR)—but not much that is *live*.

"So when the hometown Blue Jays get in the World Series it is time to pull out all the stops. First we beg friends in Lima to video everything they can off satellite. Then we get on ham radio, and miraculously get to hear a blow-by-blow description of that splendid final innings of the series courtesy of VE3HBF. Thanks, David!"

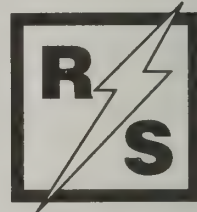
Ron, OA8BE, is from Ajax, Ontario, and Walden comes from Saskatchewan. At present they have eight New Testaments in final revision, and hope to finish their job in the jungle "...well before the turn of the century". But there is much to do in the mountains with the Quechua languages. Amateur Radio enables them to talk regularly with family in Calgary, Vancouver and Ajax, on Sundays at 2100 and 2130 UTC on 21.148 MHz, with help from VE6COS, VE7BXD and VE3ON. ■



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Propagation Forecasts for Canada

Propagation forecasts by VE3VIA, now appearing in *QST Canada*, have been specifically calculated for five regions of Canada.

The Atlantic predictions should be used by operators between 50° West and 70° West longitude, and south of the 55° North parallel.

The Eastern predictions are to be used by operators in the area between 70° West and 90° West, and south of 55° North.

The Central predictions have been calculated for operators living south of 55° North, and between 90° and 110° West.

The Pacific predictions are customized for operators living between 110° and 130° West, and south of the 55° North.

The North predictions have been calculated for an area centred on 62.5° North and 120° West.

The targets, Europe, South America, etc, were chosen to approximate those used by ARRL for its monthly forecasts published in *QST*. The number in each square is the band that the operator should use first to try to make a contact with a target area. If the cell contains an X, the possibility of a contact is extremely remote on any band.

Usually the band shown in the cell is the best possible, but if the solar flux is not as forecast, feel free to try another band. You should first try the higher band, then the lower one. For example, if the forecast says that 40 metres is the best band for a particular target and you wish to experiment, try 20 metres. It may happen that 20 metres is very close to the Maximum Usable Frequency (MUF), but you might still establish a contact. When a frequency is too close to the MUF, the chances of making a contact are less than if you are using the frequency shown on the chart. The frequencies listed in the table are very close to the Optimum Working Frequency (OWF), which is the optimum frequency for an exchange of traffic.

Questions and suggestions are welcomed. Contact Jacques d'Avignon, VE3VIA, 459 Leitch Drive, Cornwall, ON K6H 5P7. ■

Propagation Forecasts for 1993 April 15–May 15

UTC	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Atlantic to:																								
Europe	30	30	30	30	40	30	X	X	X	X	20	20	20	17	20	20	20	20	20	20	20	30	30	30
S. America	20	20	30	30	30	30	30	30	40	40	30	20	20	17	17	17	17	17	17	17	17	17	20	20
S. Africa	20	20	30	30	30	20	20	20	20	15	15	15	15	17	17	17	17	17	15	17	17	15	17	20
S. Pacific	20	20	20	30	30	30	30	30	40	40	30	30	20	20	20	20	20	20	20	17	17	15	17	17
C. Asia	30	20	20	20	20	X	X	X	X	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Eastern to:																								
Europe	30	30	30	30	30	30	X	X	X	X	X	20	20	20	20	20	20	20	20	20	20	20	20	30
S. America	20	20	30	30	30	30	30	30	40	40	30	20	20	20	17	17	17	17	17	17	17	17	20	20
S. Africa	20	30	30	40	40	X	X	X	X	X	X	17	17	17	17	17	17	17	17	17	17	17	17	17
S. Pacific	17	17	17	20	20	30	30	30	30	30	30	30	30	20	17	17	17	17	17	17	17	17	17	17
C. Asia	20	20	20	20	20	20	X	X	X	X	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Central to:																								
Europe	30	30	30	30	30	30	30	30	30	30	X	X	20	20	20	20	20	20	20	20	20	20	20	20
S. America	17	20	20	20	30	30	30	30	30	30	30	30	20	20	15	15	15	15	17	17	17	17	17	17
S. Africa	20	30	30	40	40	X	X	X	X	X	X	X	X	17	17	17	17	17	17	17	20	20	20	20
S. Pacific	17	17	17	20	20	30	30	30	30	30	30	30	30	30	17	20	20	20	17	15	17	17	17	17
C. Asia	20	20	20	20	20	X	X	X	X	X	X	X	20	20	20	20	20	20	20	20	20	20	20	20
Pacific to:																								
Europe	30	30	30	30	30	X	30	30	X	X	X	20	20	20	20	20	20	20	20	20	20	20	20	20
S. America	17	17	17	20	20	30	30	30	30	30	30	20	20	20	20	20	17	17	17	17	17	17	17	17
S. Africa	20	30	30	30	30	20	X	X	X	X	X	X	X	X	X	20	20	17	17	17	17	17	20	20
S. Pacific	17	17	17	17	17	20	20	30	30	30	30	30	30	30	30	20	20	20	17	17	17	17	17	17
C. Asia	20	17	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
North to:																								
Europe	20	30	30	30	30	20	20	20	20	20	20	20	20	20	17	20	20	20	20	20	20	20	20	30
S. America	17	17	20	20	30	30	30	30	30	30	20	20	20	17	17	17	17	17	17	17	20	20	20	17
S. Africa	20	30	30	30	30	20	20	20	X	X	X	X	X	X	20	20	20	20	20	20	20	20	20	20
S. Pacific	15	15	15	17	20	20	20	30	30	30	30	30	30	30	30	17	20	17	20	20	17	17	17	15
C. Asia	20	20	20	20	20	17	17	20	20	20	20	20	20	20	20	20	20	20	20	20	17	20	20	20

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The CRRL Field Organization Forum

SECTION MANAGER ELECTION NOTICE

To all CRRL members in the British Columbia Section: You are hereby solicited for nominating petitions pursuant to an election for Section Manager. Name of the incumbent appears on page 2 of this *QST Canada*. A petition, to be valid, must carry the signatures of five or more CRRL Full members residing in the British Columbia Section. It is advisable to have more than five signatures. Photocopied signatures are not acceptable. Signatures must be on the petition. Petition forms FSD-129-C are available from CRRL Headquarters in Arva, Ontario, but are not required. The form below is acceptable:

..... (place and date)

CRRL Field Services Manager

Box 56

Arva, ON N0M 1C0

We, the undersigned CRRL Full Members residing in British Columbia, hereby nominate (name and call sign) as Section Manager for this Section for the next two-year term of office. (signatures with call signs) (addresses with postal codes)

A Section Manager must be a resident of his or her Section, a licensed radio amateur holding a Canadian Advanced Certificate or equivalent, and have been a CRRL Full member for a continuous term of two years at time of nomination. Petitions will be received at CRRL Headquarters in Arva, Ontario, until 1600 EDT 1993 June 11. If only one valid petition is received, the person nominated will be declared elected. If more than one valid petition is received, a balloted election will take place. Ballots will be mailed from CRRL Headquarters by 1993 July 01. Returns will be counted after 1993 August 20. A Section Manager elected as a result of these procedures will serve a two-year term of office that will begin on 1993 October 01.

You are urged to take the initiative and file a nominating petition immediately.
—Ken Oelke, VE6AFO

REPORTS FOR JANUARY 1993

Alberta: Acting SM, SEC, TC: Ken Oelke, VE6AFO @ VE6YYC; STM: Gus Bakker, VE6AKY; OO/RFI Coordinator: Dick Sheppard, VE6TY; NMs: VE6CPP, VE6AKY, VE6AUZ. First, let me correct a mistake in our February report. Re the search and rescue work, CARL is working with St John Ambulance, not the Salvation Army. Good EC reports from Red Deer lately. Packet radio to the SEC works great! Edmonton Hamfest once again this May 28–30 at Shaker RV on Highway 16. Register early so that organizers can put on a great show for everyone. The first series of spring foxhunts will

Reports invited: CRRL Section Managers (SMs) and their Section-level assistants coordinate traffic handling, emergency communications and bulletin service across Canada. Your SM (name and address appears on page 2 of this *QST Canada*) welcomes reports of individual and club activities for publication in this column. Activities do not have to be related to the CRRL Field Organization or to CRRL.

start in Calgary on April 8. Contact CARA for more details. Last year CARA had 20 teams register. The CARA Annual Spring Auction will be held on April 17 at the Golden Age Club. Also on April 17, another ARLA packet meeting will be held in Red Deer for sysops and BBS owners to discuss packet radio structuring in Alberta. The last meeting was very successful in gathering together the "minds of packet radio". Many improvements are anticipated. Fern, VE6PAW in Beaumont, has been enjoying experimenting with his repeater on 147.18 MHz (+). Many improvements have been made over the year. Its use is for all and for emergency communications. The CIDA Amateur Radio program was very successful in Alberta. Wendy MacLaren from CIDA was very pleased. Students in Calgary were able to talk to countries like Zambia. Amateur television was also used in Calgary for this event. I have not heard of too many from Alberta going to Dayton this year but I am sure there are the usual. A group in Saskatchewan is trying to get a tour bus group going. Would you like to try your hand at net control duties? Ask Gus Bakker, VE6AKY, for more information. Net controlling is an excellent way to boost your experience for when emergencies occur. The Alberta Public Service Net is excellent for trying out your skills. Speaking of emergencies, are you interested in getting more involved with the ARES program? Ask your local Emergency Coordinator (EC) or Section Emergency Coordinator (SEC) for details. ARES is a proud service dating back to 1935. Time to gear up for summer activities like Field Day and the famous Glacier/Waterton Hamfest at Three Forks Campground, Montana. Don't miss this one! To the more recent hams, this is where you will find fellowship, and the various seminars to delight you. Field Day is another time for fellowship, and learning to work together in setting up a first-class portable station in an emergency-style setting. Another great way to get that needed ARES training. Ask your club representatives what they are doing for Field Day in June.

British Columbia: SM: Ernie Savage, VE7FB. BC Public Service Net (3729 kHz, 0130 UTC daily): Net Manager Ed Galbraith, VE7ELF, reports check-ins: high—205, low—135, total—5410. BC Emergency Net (3652 kHz, 1900 UTC daily): Net Manager Ray, VE7BCL, reports QNI—1182, QTC 472. Band conditions were very poor on several nights and our traffic count was down a bit. Even so, check-ins have held up well. Several members are away on winter vacations. Good news! Pete, VE7JT, who suffered a stroke several months ago, can go home very soon. 73.

Manitoba: SM: Bill Crooks, VE4JR; A/SM: VE4IX; STM: VE4STU; SEC: VE4TM; NMs: VE4LB, VE4TE, VE4TY, VE4WR. Received a note from Bruce, VE4BWA, about Interlake ARC. This club has started training classes with Pete, VE4PWO, as instructor. They have seven students enrolled. The club's total membership is 57. The repeater at Arborg will soon be active, and a repeater is planned for Teulon. Ed, VE4SV, and Bruce, VE4BWA, put on a presentation on Amateur Radio under the auspices of the Interlake ARC. They also plan on participating in Girl Guides-on-the-Air in February. News from the Pinawa area: a 30-km cross country ski marathon called a *loppet* was held on January 31. There was a main base station plus a number of mobiles along the way. Garry, VE4GMS, organized this affair. Thanks go to VE4s BV, HGD, MHZ, TCP, SAM, STM, and WTS, and to

Alan, VE4AKM, who kindly sent in this report. Locally, Winnipeg Seniors ARC started a training session on Tuesday, February 2, with two sessions per week. They expect to be finished by the end of April. Also, Winnipeg ARC has started another course with about 21 hopefuls. Good luck to all. A report from Rod, VE4TM, SEC for Manitoba: On 1992 December 18, an eastbound CN freight train carrying hazardous goods derailed one-half mile east of Oakville, Manitoba. ARES members were contacted on December 20 to man and operate commercial-band radios for Manitoba EMO. The following amateurs were involved: Rod, VE4TM; Ron, VE4RHK; Steve, VE4WS, and Bud, VE4CP. 73.

Maritimes-Newfoundland: SM: John Avery, VE1IW; STM: Bob Kirkpatrick, VE1VAR; BM: Brent Taylor, VE1JH. No report available yet. The Maritimes-Newfoundland Section is happy to announce the appointment of John Avery as Section Manager. Congratulations John! We wish you well.

Ontario: SM and Acting SEC: Larry Thivierge, VE3GT @ VE3OSQ; A/SM and BM: VE3AV @ VE3JF; STM: VE3CYR @ VE3KRG; TC: VE3EGO. VE3DUI is the new net manager of the Toronto Open Line Net sponsored by the Toronto FM Communications Society. The net is held nightly on repeater VE3RPT. Art is replacing John, VE3POJ, who held the appointment for the past 5-1/2 years. Congratulations, Art, and many thanks to John for his dedication and support. It appears that the Toronto VHF Society has again been given permission to use the Algonquin Park Institute for Space and Terrestrial Science 46-metre dish. The dish is fully steerable and usable up to 30 GHz. Operators will be VE3ASO, VE3CRU, VE3EMS and W9IP. New frequency for the Manitoulin ARC repeater, VE3RMI at Little Current, is 147.270 MHz (+). It is working well, with full autopatch and reverse autopatch capabilities. VE3NGC has resurfaced on the bands after a few years of inactivity. VE3ES has a new tribander up. At ARRL Headquarters the DXCC backlog has eclipsed all other issues. With additional computer peripherals and a second shift, the backlog is finally receding. The continued patience of DXCC members will be required for another few months. Also at ARRL Headquarters, operating positions at W1AW have been upgraded and new equipment has been added. Six HF and two VHF operating positions are now available for visitors, as are packet and RTTY modes. After an excellent presentation to the Ottawa Packet Group's meeting on the new National Capital Freenet System, VE3JF created the very first SIG (Special Interest Group) on Freenet dedicated to Amateur Radio. By dialling into a single number, members of the community have a free 24-hour connection to information and interaction with any of the participating organizations. The Freenet is an electronic community centre, public square and information fair. All that's required is a computer and a modem. VE3PPE, Fitzroy Harbour, has a 9600 bps packet BBS on repeater VE3GSD, 444.45 MHz (+). This month, ARES reports were received from the following groups and ECs:

Group	EC	No. of Nets Held
High Counties	VE3FS	4
Kemptville	VE3GNW	1
Brampton/Caledon	VE3LPM	5
Eastern Counties	VE3QJN	4

There may have been others who reported, but unfortunately, due to a break-in at my home BBS,

VE3OSQ, I was unable to recover the information. High Counties ARES has a new 440-MHz machine on the air, VE3DRC (Dufferin Radio Communications), to be housed permanently in their Emergency Operations Centre. Information from the US is that the amateurs opting for the Novice licence have virtually disappeared. New amateurs favour the "no-code" Technician licence. It appears that most of the new licensees are not bothering with code and sticking to the VHF bands. It sounds as if there will be a drop in the number of "real amateurs" in the near future. I surely hope the same will not occur in Canada. So far a fair number of the newly licensed amateurs are passing their first code test, and many are going on to the second one. I hope this continues.

Quebec: SM: VE2ALE; STM: VE2ED; BM: VE2ALE; OBS: VE2GOP; QSL MGR: VE2IJ. We are saddened to report that Jean Lord, VE2PL, became a Silent Key on January 24. Still the usual problems on BBSs where ARL Bids are incomplete, changed, and/or omitted. ARRL, in a bulletin in December, requested all stations uploading bulletins to retain the proper and accurate Bids to relieve congestion on the systems. Another item to note: Bulletins and informal information should not be overly long; some have been seen on BBSs at 2.5-feet long on paper. To all: Please do not forget the HF band nets. There has been a recent call by the Field Services Manager for more participation in ARES and the ARES Sunday net on 14.115 MHz at 2000 hours UTC, and to fill the many volunteer positions that are open. Please contact your provincial Section Manager as to what is available. VE2HN, assisted by Helen, VE2WAK, and VE2GOP with Cliff, VE2CB, presented an Amateur Radio information program to the Tea and Topics Seniors group of Valois, Quebec, with a tape-recorded contact on 40 metres. A summary of the 1992 VE2CWI DXpedition to the James Bay area was given by VE2HN, while Helen talked about YL interest in the hobby. White caner VE2GOP explained how blind people can enjoy Amateur Radio as a worthwhile hobby. Note that packet radio is an advantage for white caners who have synthesizers on their computers. They can now read the bulletins at their leisure. In January, I received a QSL card via the VE2 Bureau for a 10-metre QSO dated 1961 July 3. This was 31 years and 5 months after the date of contact and must be a record. He had many awards listed. His name but no call sign was on the card. It shows that logs are still important. For awards and certificates, you must keep a log.

Saskatchewan: SM: Joan Lloyd VE5JML. The VE5NJR repeater group held its annual meeting on January 9 in Wynyard, with Eric, VE5HG, speaking on the linked repeater system in Saskatchewan. The VE5HVR repeater is now on the link system. Members of the Southwest Amateur Radio Club met on January 16 in Swift Current for a belated Christmas celebration. Regina's Wascana Park was the scene of the annual Boy Scout/Girl Guide Klondike Hike on January 30. Regina amateurs who provided communication and relayed scores

Calendar



Attention: Deadline for items is the 20th of the second month preceding month of publication. For example, information should reach *QST Canada* by January 20 to be included in a March issue.

Edmonton, AB: Northern Alberta Hamfest '93, May 28-30 at Shakers Acres RV Park, 21530-103 Ave, on Hwy 16. Pre-registered admission: adults \$10, 16 and under \$5, family \$20. Admission at the door: adults \$12, 16 and under \$6, family \$24. Saturday banquet, social night, Sunday brunch, RV and day parking. Register early for RV full hookup at \$7 per night extra. Fleamarket tables \$5, \$6 at the door. For more information, contact Jim Steene VE6JDS, 9319-95 St., Edmonton, AB T6C 3X1.

Parry Sound, ON: Near North Hamfest, Saturday, May 15, 1000-1400, in Parry Sound High School gym. Sponsored by North Bay, Sudbury and Muskoka ARCs. Admission \$2. Non-commercial tables \$5, commercial tables \$10. Food, refreshments and free parking. Talk-In on VE3PSH, 145.490 MHz (-). For more information, Tel (705) 746-9115.

Ajax, ON: Durham Region Amateur Radio and Computer Flea Market, Saturday, April 3, 0900-1400, at Pickering High School, Church St. North, Pickering Village. Sponsored by South Pickering and North Shore ARCs. Admission \$5, vendor tables \$12. Vendors may set up starting 0730. Talk-in on VE3SPA, 147.375 MHz (+), and VE3OSH, 147.12 MHz (+). For more information, contact Ron Brown, VE3WZ, Tel (416) 839-3711; Kim Becker, VE3SWZ, Tel (416) 683-6883; or Garry Brisbane, VE3REP, Tel (416) 683-4335. ■

were VE5s: AAA, ABL, CON, CS, DCP, EE, ELJHQ, JAM, MH, MNM, MU, NX, PI, RC, RJR, SHK, UU, WW and ZG. Listen for a new repeater on the air at 147.00 MHz (-) from Unity, Saskatchewan. Call sign and date of starting operation will be announced. We welcome to the following VE5s to our Amateur Radio ranks: CGK, DTH, DV, HFD, JLL, KXR, MOM, PJP, RDM, TAT, TAZ, TBS, WGN, WJZ, and WWP. As I write, it is 11 weeks until Dayton Hamvention. I hope to see a number of my fellow VE5s attending this year. See you at Dayton! ■

AMATEUR LICENCES BY CALL AREAS

Here are Canada-wide figures updated to 1992 October 31. All figures include repeaters:

VE1 New Brunswick, Nova Scotia	2709
VE2 Quebec	7397
VE3 Ontario	12585
VE4 Manitoba	1233
VE5 Saskatchewan	1034
VE6 Alberta	2894
VE7 British Columbia	5942
VE8 Northwest Territories	123
VE0 Maritime Mobile	227
VO1 Newfoundland	775
VO2 Labrador	52
VY1 Yukon Territory	71
VY2 Prince Edward Island	212
VY9 DOC club stations	3
Grand Total	35257

Special note: DOC club stations include VY9CC at DOC Headquarters, Ottawa; VY9CR, Communications Research ARC, and VY9CYK in Yellowknife, Northwest Territories.

DOC RELEASES CALL SIGNS

In the past, call signs with the three-letter suffixes QAA-QZZ were not allocated to amateurs. DOC recently announced that the following call signs will be released: QAA-QNZ, and QVA-QZZ. The remaining three letter call signs will be reserved for maritime mobiles and Q-signals.

1993 ODXA CONVENTION

The Ontario DX Association (ODXA) 1993 Convention is will be held on May 1, at the Ramada 400/401 Hotel in Downsview, Ontario.

Registration starts at 0800. Sessions run through the day from 0900-1700.

The keynote speaker will be Ian McFarland. Other speakers and their topics will include:

Rich McVicar—HCJB, Quito, Ecuador
Ralph Cameron, VE3BBM—RF Interference Problems

Bob Ing—An Introduction to Scanner Listening

Steve Canney, VE3FQ—Getting Started in Shortwave Listening

David Rosenthal, Science Correspondent, Radio Nederland—Propagation and WWV

Jacques d'Avignon, VE3VIA—Monitoring with a Computer

John Fisher—Latin American DXing
Convention registration is \$12.

END-FED ANTENNAS

What's a good length for an end-fed antenna? If you want to work 80-10 metres, it's hard to go wrong with 90 feet. Loaded against ground, impedances are reasonable, and easily handled by a simple antenna tuner. For 40-10 metres, try 45 feet. —Harry MacLean, VE3GRO ■

NOTICE

In order to comply with new Canada Post regulations regarding the mailing of *QST Canada*, we recently changed to a new supplier of address labels attached to the magazine.

Our new supplier uses field lengths (the space available for information) that are smaller than those used by our previous supplier. As a result, some of the data cannot be printed—typically the last characters of call signs. While this may cause you concern, please be assured that our database is not affected, and the data in your membership records remains unaltered.

We hope that our supplier will soon be able to increase his fields and end this problem. —Ray Staines, VE3ZJ, General Manager, CRRL ■

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Belleville Invokes its Emergency Plan

Beginning around noon December 10, a continuous heavy snowfall hit eastern Ontario. The wind was strong and continuous, leading to serious drifting. Roads and highways became very hazardous due to poor visibility and slippery surfaces. Belleville was at the centre of the afflicted area, where snowfalls of 50–60 cm were registered.

Highway 401, the major route between Montreal and Toronto, became impassable, and all lanes were closed at Belleville by the Ontario Provincial Police (OPP). Traffic was directed south to the city. Fearing a heavy influx of persons requiring emergency shelter, the Mayor of Belleville declared a state of emergency and convened the Emergency Operations Control Group (EOCG).

By good fortune the local telephone and electric power services were not affected. Nevertheless, anticipating possible communications problems if the storm continued, John Lester, VE3MB, the EC for Hastings County, activated his group and alerted the neighbouring ECs.

On instructions of the EOCG, the Belleville Fire Department opened the Quinte Secondary School to provide shelter for those who might need it. While only 25 people needed this shelter, many more could have been accommodated if the storm had lasted longer.

A fallen tree put the main repeater, VE3RTR, out of service for six hours. To replace it, the local repeater, VE3MHZ, located at OPP District Headquarters in Belleville, was made available for emergency traffic. John, VE3BPA, served as NCS. Other members of the Hastings County ARES group were stationed at the emergency shelter and other key locations.

Fortunately, the fury of the storm abated late in the day on December 11. Road crews did a great job of clearing and sanding roads, and highways were re-opened early on December 12. The City of Belleville and ARES remained in a position of readiness in case things changed for the worse. While some emergency traffic was handled, the volume was much less than it might have been if the telephone system had failed.

CHATHAM-KENT ARES COMMITTEE

Bill MacIntosh, VE3MAC, Emergency Coordinator for Chatham-Kent Amateur Radio Club's ARES group, provided this report on his group's organization, facilities and program:

"Chatham-Kent Amateur Radio Club

(CKARC) has had an active Emergency Service Committee for many years. Present committee members are carrying on

work started many years ago. Our Emergency Coordinators are VE3MAC, VE3CMC and VE3FUN. The tri-coordi-

Field Organization Reports January 1993

CRRL Section Emergency Coordinator Reports

Reports were received from the following SECs (DECs and ECs reporting are listed in brackets) denoting a total ARES membership of 1008.:

Reporting	ARES Members
VE3GT (VE33 FS, GNW, LPM, OJN)	107
VE6AFO (VE6CIA)	372
VE7HJS	96

CRRL Section Traffic Manager Reports

Call	Orig	Rcvd	Sent	Divd	Total
VE1BTB	0	28	26	0	54
VE1YS	0	15	19	1	35
VE1VAR	0	12	4	2	18
VE1ALU	1	6	6	1	14
VE1VAU	0	6	5	1	12
VE2ALE	0	56	237	1	294
VE2GOP	0	36	84	0	120
VE2ED	2	31	4	29	66
VE3ORN	3	82	86	16	187
VE3HZQ	6	69	104	5	184
VE3GSQ	0	92	79	0	171
VE3AJN	0	89	55	3	147
VE3GT	0	45	74	1	120
VE3CYR	0	81	27	1	109
VE3GNW	0	51	57	0	108
VE3AAU	1	32	40	5	78
VE3WV	0	56	7	1	64
VE3PXR	3	25	23	7	58
VE3BDM	0	27	30	0	57
VE3FS	0	21	20	1	42
VE3SB	0	14	17	0	31
VE3ADX	2	14	13	1	30
VE3DVE	0	11	15	2	28
VE3NVJ	1	5	10	1	17
VE3CVK	2	7	3	4	16
VE3DBG	0	11	5	0	16
VE3GKB	1	4	6	1	12
VE3LPM	0	2	8	2	12
VE3MNI	1	2	7	1	11
VE3BAJ	0	2	7	1	10
VE4JR	0	19	16	7	42
VE4TE	0	12	10	4	26
VE5KZ	2	23	23	0	48
VE5JML	0	0	5	0	5
VE6CPP	0	10	10	0	20
VE6AKY	2	2	2	1	7
VE7BNI	36	176	263	34	509
VE7ANG	0	89	91	2	182
VE7BCL	0	86	42	8	136
VE7XA	4	35	44	9	92
VE6CE	9	28	19	6	62
VE6GX	5	31	10	14	60
VECCJ	2	29	25	2	58
VE7BZI	8	26	8	7	49
VE7FB	4	17	12	8	41
VE7GKA	4	19	4	9	36
VE7BCF	0	22	7	0	29
VE7OM	1	14	12	1	28
VE7WI	0	15	5	2	22
VE7DKS	0	15	6	0	21
VE7SR	0	9	10	1	20
VE7CZW	0	12	4	0	16
VE7FRZ	1	14	1	0	16
VE7AHU	0	9	3	0	12
VE7BUU	0	10	1	0	11
VE7ALV	1	8	1	0	10
VE7DJ	0	3	0	0	3

National Traffic System

Net (Mgr)	Sess	QNI	QTC
APN (VE1YS)	28	165	127
QSN (VE2ED)	17	74	27
KTN (VE3AJN)	13	106	16
OLN (VE3DUI)	31	958	41
OPN (VE3AJN)	31	761	241
OQN-D (VE3ORN)	30	137	54
OQN-E (VE3CYR)	31	188	67
OQN-L (VE3GSQ)	30	95	30
MEPN (VE4LB)	29	1249	26
MMWX (VE4TE)	31	545	25
MTN (VE4TY)	27	251	11
SEPN (VE5ND)	30	2202	5
APSN (VE6AKY)	31	1439	25
ATN (VE6CPP)	31	151	52
BCEN (VE7BCL)	31	1182	472
BCPSN (VE7ELF)	31	5410	0

Brass Pounders' League

This listing is available to amateurs who report to their SM a traffic total of 500 or a sum of originations and delivery points of 100 or more for any calendar month. All messages must be handled on amateur frequencies, using standard ARRL-CRRL form, within 48 hours of receipt.

BPL: VE3KK, VE7BNI

Public Service Honour Roll

(1991 Revision) This listing is for amateurs whose public service performance during the month indicated qualifies for 70 or more points in these eight categories (as reported to their SM). Note maximum points for each category: (1) Checking into a public service net, any mode, 1 point each, maximum 60; (2) Acting as Net Control Station (NCS) for a public service net using any mode, 3 points each time, maximum 24; (3) Performing assigned liaison between public service nets, 3 points each time, maximum 24; (4) Delivering a formal message to a third party, 1 point each, no maximum; (5) Originating a formal message from a third party, 1 point each, no maximum; (6) Serving as a CRRL SM or field appointee, 10 points for each office or appointment, maximum 30; (7) Participating in a communications network for a public service event, 10 points each event, no maximum; (8) Providing and maintaining an automated digital system handling messages in standard ARRL-CRRL format, 30 points. Those qualifying for Public Service Honour Roll for 12 consecutive months, or 18 months out of 24, will earn a special certificate.

PSHR: VE2ED (115), VE3AJN (141), VE3ORN (137), VE3HZQ (129), VE3CYR (129), VE3GT (129), VE3BDM (128), VE3GNW (128), VE3GSQ (128), VE3FS (117), VE3PXR (100), VE3LPM (81), VE4LB (101)

Service and Specialized Nets

Independent Net Managers: Your monthly reports are welcomed. Please send your reports to CRRL, Box 56, Arva, ON N0M 1C0.

Net (Mgr)	Sess	QNI	QTC
CRRL ONTARS	31	12890	0
GBN (VE3WV)	31	121	31
GBSSN (VE3WV)	31	159	48
Manitoba Repeater	10	817	0
Aurora 1 (VE5ND)	29	2019	2
Prairie WX (VE5EX)	31	776	0
Sask ARES (VE5FY)	5	214	0
Central Sask 2m (VE5HG)	31	1478	0
Saskatoon 2m (VE5DN)	31	474	0
MJARC 2m (VE5JJP)	28	405	0
Avonlea 2m (VE5EE)	31	1012	0
Alberta ARES (VE6AKY)	8	231	4

nator position was deliberately created to cover any problem that might arise if one person were not available, and to provide continuity: VE3FUN was the previous EC. While we have a large number of club members ready to take an active part should an emergency arise, we have purposely set up key people in the surrounding areas to provide us with initial communication if required. These amateurs are essential to an effective coverage of Kent County and surrounding areas.

"CKARC can provide communications in the HF, VHF and UHF bands from either a fixed or portable location, as well as mobile. The club's emergency trailer is equipped to provide communication with outside centres by radio as well as by cellular telephone. It is a self-contained unit with its own propane and water and its own emergency generator. It can be moved and set up within a few minutes.

The club's repeater system consisting of VE3KCR on 147.12 MHz, VE3COZ on 145.19 and 444.325 MHz, and VE3RUN on 145.09- and 223.40-MHz packet, allows us to cover most of this portion of the Great Southwest as well as parts of Michigan and Ohio. VE3KCR is our main repeater and is located on a tower east of Chatham. It is a highly sophisticated piece of equipment with several communications attributes useful for emergency support. VE3COZ is in the same general area. Both repeaters have autodial access to our local police and the Ontario Provincial Police. Since many of our members are avid boaters, Trenton Search and Rescue may be contacted via VE3KCR. To enhance our repeater coverage, we have four receive sites at various locations. The repeater system has its own backup emergency power in case of power outage. A spare repeater is available should the need arise.

"In case of extreme weather—tornadoes and the like—the main repeater can be turned over to CANWARN (see the 1991 April *QST Canada* Public Service column). CKARC has been a strong supporter of CANWARN since its inception a few years ago and our club has provided equipment to facilitate communications in the tri-county area. The club has provided weather radios for all the schools and hospitals in Kent County. One is also located in the office of the Emergency Coordinator at Chatham Civic Centre.

"CKARC holds a two-metre net every Wednesday at 2100. This net is used to pass emergency traffic and information. It also enables us to keep our control procedures sharp. From time to time, club members participate in emergency simulations, such as locating a downed aircraft. While these activities have been fun, they are taken seriously by all those participating.

"We have maintained a close working relationship with the local Red Cross, the

Chatham Police Department and the Fire Department. In case of disaster or emergency, these organizations are aware that the Chatham-Kent Amateur Radio Club is ready to assist with equipment, personnel and expertise.

"At present CKARC has a committee studying the feasibility of connecting into the VE3ULR linked repeater system. Plans are being made to meet with representatives of the Civilian Air, Sea and Rescue Association, to determine how we might assist one another should the need arise. The future of ARES in Kent County looks interesting and exciting."

EMERGENCY PREPAREDNESS CANADA TRAINING COURSES

Emergency Preparedness Canada provides a wide variety of training courses related to emergency planning at its college at Arnprior, Ontario. The one-week course on exercise design includes a review of the many types of emergency exercises that can be staged. Here are some extracts from the notes they provide for this review:

General

When most people think of exercises, they immediately visualize a full-scale involvement of all emergency response elements mentioned in their emergency plan. This is not true. The full-scale exercise should be the final product of many smaller exercises that have been previously conducted by each of the response elements of the emergency organization.

An exercise is a substitute for an actual experience. It enables participants to learn by doing, but it is not 'for real'. A monumental goof is not a monumental disaster. Thus, the exercise to be selected is the one that achieves the aim of the emergency plan, confirms previous training, provides simplicity of operation with the most lessons to be learned, and is cost effective.

Types of Exercises

The type selected depends heavily on the purpose, the availability of human and material resources, and the limitations of conducting exercises that apply to the emergency planner's area. They are categorized as Minor, Specialty, Communication and Major.

- **Minor Exercises** include these types: 1) *Paper*: These are characterized by the imposition of paper events or constraints on participants, with the principal intention of promoting types of interaction. 2) *Study*: These are designed to develop the problem solving capabilities of participants. 3) *Table Top*: All participants describe their response actions using a map, diagram or model. 4) *Individual*: Exercises developed by one agency.

- **Specialty Exercises** mainly involve specialty teams, although other agencies

can expect to provide support. Examples are bomb threat, hijacking, radiation spill and mine disaster.

- **Communication Exercises** include alerting (fan-out) exercises, emergency operations centre, and media.

- **Major Exercises** involve all the emergency response organizations and resources required to test an emergency plan. They may involve some or all of municipal, provincial, national or even international agencies....

The notes end with these wise words which we all should heed:

"The success of an exercise is not measured by how many mistakes the responding organizations made, but whether it provided a realistic setting for practising emergency response and identifying and correcting the mistakes made during the exercise."

That's all for this month. —Bob Boyd, VE3SV

This column appears in both The Canadian Amateur and in QST Canada. We hope that it serves as an ongoing source of news and information about ARES for members of both CRRL and CARF.

A reminder that ARES is part of the CRRL Field Organization, although you do not have to be a CRRL member to take part. For more information about how to set up an ARES group, contact your CRRL Section Manager (address appears on page 3 of this QST Canada) or your CRRL Section Emergency Coordinator. —Editor

CZECH, SLOVAK CHANGES

The Central Radio Club of Czechoslovakia ended on 1992 December 31. Its successors, the Czech Radio Club (CRC) and the Slovak Amateur Radio Association (SARA) are applying for IARU membership. QSL bureau addresses are:

CRC (OK/OL), Box 69, 11327 Praha 1, Czech Republic.

SARA (OM), Box 1, 85299 Bratislava 5, Slovak Republic.

Ham-Ads



Advertisements must pertain to Amateur Radio. For individuals or firms offering products or services for sale, the rate is \$0.50 a word + GST. This is reduced to \$0.25 a word + GST for those seeking to dispose of or acquire personal station equipment. Telephone numbers count as one word. No charge for postal codes. Unless specified, a *QST Canada* Ham-Ad will appear in the next available issue. Send Ham-Ads to CRRL, Box 56, Arva, ON N0M 1C0.

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AR-900	SCANNER 100CH HANDHELD	399.00	295.00	IC-FL54	270 HZ CW FILTER 730	73.00	35.00
Butternut				KLM			
BT-2MCV5	2M VERTICAL	104.50	70.00	KM-20M4 *	4 ELEMENT 20M YAGI	627.00	499.00
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BT-HF5B	2 ELEMENT HF BEAM	382.00	279.00	KM-435-18C	SATELLITE 435-450 ANT	319.00	229.00
B&W				KM-KT34XA *	HF BEAM ANTENNA	1045.00	799.00
BW-AC1.8-30	CONTINUAL COVERAGE DIPOLE	307.00	199.00	Kenwood			
BW-AC2-22	FOLDED DIPOLE 185'	459.00	299.00	KW-BC2	WALL CHARGER FOR TH25	27.25	15.00
BW-AS20	SHORT DIPOLE	179.00	149.00	KW-BC6	RAPID CHARGER PB21 FOR TH21	110.00	49.00
BW-ASW60C	60-11M SWL ANTENNA COAXIAL	115.00	75.00	KW-FA4	FAN UNIT TS430S	34.25	15.00
BW-ASW60L	60-11M SWL ANTENNA TWIN LEAD	115.00	75.00	KW-SC16	SOFT CASE FOR PB7/8	26.00	10.00
BW-BC1	BALUN 1:1 50 OHMS	99.75	60.00	KW-SO2	HIGH STABILITY TXCO TS950	179.00	150.00
BW-BC2	BALUN 50-200 OHMS	122.00	60.00	KW-YK455C1	500 HZ CW FILTER 140S	152.00	125.00
Cushcraft				KW-YK88A	AM FILTER TS-430	128.00	80.00
CC-416TB	16 ELEMENT 435-437	117.00	89.00	MEJ			
CC-A144-20T	VHF 20 ELEMENT OSCAR	145.00	110.00	MFJ-1225	RECEIVER ONLY C/W INTERFACE	109.99	75.00
CC-A14SK	A147-4 STACKING HARNESS	45.00	35.00	MFJ-1282B	C64/128 STARTER PKG	68.99	49.00
CC-A14TMB	TWIST MOUNTING	48.00	29.00	MFJ-850	AC VOLTAGE MONITOR	33.99	19.00
CC-A21SK	A220-11 STACKING HARNESS	54.00	15.00	MFJ-948	ANT TUNER X-METER 300 WATT	199.00	143.00
CC-A3-SK	HARDWARE KIT FOR A3	53.00	39.00	MFJ-949E	TUNER 300W 1.8-30M	249.00	195.00
CC-A3WS	3 ELEMENT WARC HF BEAM	374.00	299.00	Publications			
CC-A449SK	STACKING HARNESS TWO A449	45.00	25.00	PB-ATV SECRETS	NARA ATV BY H. RUE	12.00	6.00
CC-D4	7 - 14 - 21 - 28 MHZ ANTENNA	310.00	249.00	PB-CLANDCONF	CLANDESTINE CONFIDENTIAL	12.50	6.00
CC-P166-4	4 ELEMENT YAGI 158-166MHz	139.00	95.00	PB-INSIDE MCC	INSIDE THE MISSION CONTROL	14.95	8.00
CC-P174-4	4 ELEMENT YAGI 166-174 MHz	157.00	115.00	PB-SOLID STATE	SOLID STATE DESIGN	15.95	10.00
CC-R45K	17 M KIT FOR R4	68.00	45.00	PB-SPARK	ARRL FROM SPARK TO SPACE	25.50	15.00
Connect Systems				Peritex			
CS-8000	FULL DUPLEX INTERCONNECT	469.00	350.00	PR-BP85S	800mA 12V NICAD FOR ICOM	89.95	65.00
Diamond				Sangean			
DM-K100M	N TYPE GUTTER MNT	49.00	35.00	SG-700L	12 BAND SW RECEIVER	79.00	55.00
DM-K200M	HATCHBACK/TRNK MOUNT	49.00	35.00	SG-ATS818	SW/AM/FM DIGITAL RECEIVER	329.00	250.00
DM-K300M	FOLDING GUTTER MOUNT	119.99	85.00	SG-ATS818CS	DIGITAL SW/AM/FM W/CASSETTE	359.00	275.00
DM-K704M	DELUXE MAG MOUNT	79.99	60.00	SG-DT200V	AM/FM/TV RADIO	99.00	75.00
DM-NR770HNMO	2M/70CM W/ NMO	89.95	65.00	Telex/Hygain			
DM-SG7000	2M/70CM MOBILE	109.99	80.00	TH-103BAS	3-ELEMENT 10M BEAM	157.00	110.00
DM-SG7200NMO	2M/70CM DUAL BAND	119.95	85.00	TH-203BAS	3-ELEMENT 20M BEAM	352.50	250.00
DM-SPM35	MOBILE ANTENNA MAG MOUNT	59.99	45.00	TH-218S	COMP OSCAR ANT SYSTEM	499.00	350.00
DM-SX100	SWR/PWR METER	219.99	165.00	TH-DX88	10-80M HV VERTICAL	385.00	299.00
Datong				TH-TH3JRS	3-ELEMENT TRI BANDER	405.00	299.00
DT-ANF	AUTOMATIC NOTCH	283.00	195.00	Vectronics			
DT-RFA	SWL RADIO PRE-AMP	65.00	40.00	VC-PS50F *	50A 13.8V FIXED PS	559.00	499.00
Hustler							
HS-6BTB	6 BAND VERTICAL W/30M	329.00	175.00				
HS-BBL144A	5/8 MBL ANT W/COAX	63.00	30.00				
HS-G6-144B	6dB BASE ANTENNA	199.00	125.00				
HS-G7-144	7dB BASE ANTENNA	299.00	199.00				

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FEEL FREE

Kenwood Unveils the World's Smallest HF Transceiver

Offering high-performance HF communications with go-anywhere convenience, Kenwood's new TS-50S strikes a bold blow for freedom. Despite its compact dimensions—ideal for mobile use—the TS-50S provides a maximum output of 100W, plus a wealth of sophisticated features. For example: 100 memory channels for independent storage of transmit/receive parameters, versatile memory/scan functions, and a microprocessor-controlled DDS with innovative "fuzzy" control. In addition to dual VFOs (A and B), the TS-50S is fully equipped for split-frequency operations. For user-friendly operation on the move, there's a multi-function microphone and powerful menu system. Other advanced features include AIP for superior dynamic range, IF shift and CW reverse mode for interference reduction, TF-SET, and a noise blanker. In fact, the world-class TS-50S transceiver comes up short in only one category: size.

- 500kHz ~ 30MHz general coverage receiver ■ DDS (Direct Digital Synthesizer) with fuzzy control ■ Large LCD panel with digital bar meter ■ Auto-mode capability ■ Menu system ■ AIP (Advanced Intercept Point)
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- Optional 500Hz CW filter (YK-107C) ■ Optional external antenna tuner (AT-50)

KENWOOD HF TRANSCEIVER TS-50S

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